REMARKS

1. Claim Amendments

Claim 9 has been amended to correct a typographical error in the preamble. No new matter has been added with this amendment. Entry of this amendment is respectfully requested in as much as it will place the application in a better condition for the purposes of appeal.

Claim 13 has been amended to clarify the claimed invention. No new matter has been incorporated with this amendment. Support for this amendment may be found on pages 8 -- 10 of Applicants' Specification. Entry of this amendment is respectfully requested in as much as it will place the application in a better condition for the purposes of appeal.

2. Rejection of claims 1, 2, 5-10, 13-15, 17 and 18 under 35 U.S.C. §103(a) as unpatentable over Brownawell et al., U.S. 5,069,799, hereafter "Brownawell" or "'799".

Claims 1, 2, 5-10, 13-15, 17, and 18 have been finally rejected as obvious over Brownawell '799, with claims 1, 7, 13, and 18 being independent.

The basis of the PTO's rejection is as follows:

Brownawell '799 discloses an oil filter comprising a hollow housing having an inlet and an outlet, a mechanically active filter member (i.e., inactive filter media 12) disposed inside the housing, and a chemically active filter member (i.e., 14) disposed inside this housing. This reference further discloses an embodiment having a supplemental cartridge with a chemically active filter member (i.e., 30) disposed therein. The chemically active filter member includes a plurality of particles (see col. 2, line 6) containing a beneficial additive such as a basic salt of the type recited (see col. 2, lines 12-17). Accordingly, this reference discloses the claimed invention with the exception of the diameter of the particles in the chemically active filter member (claims 1, 2, 5-10, 13-15, 17), and the percentage of the additive in these particles (claim 18). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ particles having the recited diameter in the reference system, in order to facilitate handling of the treatment material in this reference system. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the recited amount of beneficial additive in the reference particles, in order to

ensure that a sufficient amount of additive is present in these particles to adequately rejuvenate the oil undergoing treatment.

(Office Action of 3/2/05, pages 2 and 3.)

Applicants greatly appreciate the detailed basis of rejection but must respectfully disagnee and traverse the rejection.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2143.

This standard has not been met in the instant case, particularly with respect to independent claims 1, 7, 13, and 18 and dependent claim 17.

Brownawell '799 discloses a filter system that requires both an active filter media and an inactive filter media. The active filter media can be a combination of a chemically active filter media and a physically active filter media. (See '799, col. 1, lines 52-55). The PTO has admitted that Brownawell '799 fails to disclose a required element of claim 1, i.e., that Brownawell '799 is silent as to a chemically active filter element containing particles of a beneficial additive having Applicants' required average diameter.

Brownswell's sole discussion of the shape or size of any particles comprising a 'beneficial additive' in the '799 chemically active filter media is limited to the use of ZnO 'pellets' in Example 2.

Although the '799 states that substrate supports for the chemically active media may be in the form of pellets, this discussion says nothing about the shape or size of any particles comprising a beneficial additive.

Thus, as admitted by the PTO, Brownawell '799 is silent as to Applicant's claimed filter using particles comprising a beneficial additive, and having a particular average diameter. Most importantly, Brownawell fails to provide any suggestion.

Moreover, the Merriam Webster defines pellet as "a small rounded, spherical or cylindrical body. Thus, Brownawell's generic disclosure of pellets merely points one of

skill in the art to either rounded or cylindrical bodies. It therefore fails to provide a clear suggestion to use particles of a particular diameter, i.e., necessarily spherical or round particles that will provide the necessary intersticial spaces. It will be recognized by those of skill in the art that cylindrical particles would not provide the necessary intersticial spaces.

Finally, the PTO is silent as to where this rationale arises or is provided for. Although the PTO's rationale for a motivation may be different from that relied upon by an inventor, it must be the *prior art* that provides the motivation to make the necessary modification. There must be a teaching in the *prior art* for the proposed combination or modification to be proper. *In re Newell*, 13 U.S.P.Q.2d 1248 (Fed Cir. 1989), *emphasis addod*.

Although Brownswell teaches that chemically active filter media may contain a strong base, hydroperoxide decomposers, or media containing a dispersant functional group, Brownswell is sitent as to the use of antioxidants or any necessary concentrations or amounts of such chemically active filter media.

In contrast, Applicants' invention of independent claim 1 requires "...a plurality of particles having intersticial spaces therebetween, said particles having an average diameter of from 0.1 to 6 millimeters and being retained in said oil filter, the particles comprising a beneficial additive to be released into engine oil as said engine oil circulates through the intersticial spaces." Independent 13 requires a chemically active filter member that contains particles of a particular average diameter that contain a beneficial additive consisting essentially of at least one of an antioxidant, a basic salt, or a mixture of a basic salt and an antioxidant. It is also noted that claim 17 depends from claim 1 and requires that the beneficial additive comprise a particularly selected untioxidant.

Independent claim 7 also requires particular structural elements not disclosed in Brownawell '799.

Independent claim 18 requires particles that comprise from 90 to 97% by weight of a beneficial additive comprising at least one of an antioxidant, an anti-wear agent, a basic salt, or a mixture thereof

The cited reference fails to provide a prima facie case of obviousness as to any of these claimed inventions. It is noted that for the purposes of appeal, independent claims 1, 7, 13, 17, and 18 will <u>not</u> stand and fall together.

For example, independent claim 1 requires an oil filter having a housing with both a chamically active filter and a mechanically active filter. Applicants' chemically active filter of claim 1 must contain a plurality of particles having intersticial spaces therebetween, wherein the particles comprise a beneficial additive and have an average diameter of from 0.1 to 6 millimeters.

Independent claim 1 thus requires the presence of intersticial spaces between the particles of the chemically active filter. As discussed in Applicants' Specification, the size of the intersticial spaces between the particles in the filter matrix directly affects the ability of the chemically active filter to screen out the complexes that result from the reaction between the combustion acids and the beneficial additive of the particles. The size of these necessary intersticial spaces results from Applicant's particular selection of suitable particle sizes, i.e., particles having an average diameter of from 0.1 to 6.0 millimeters.

Brownawell fails to recognize the importance of the particularly selected average diameter range and the resulting particularly sized intersticial spaces in screening out complexes that result from the action of the beneficial additive. As a result, Brownawell fails to disclosure or suggest a required limitation of the invention of amended independent claim 1.

Rather, Brownawell directs those of skill in the art to solid substrate supports, i.e., cylinders and spheres that do not have any intersticial spaces therein. Brownawell thus fails to recognize the importance of intersticial spaces in the chemically active filter media, let alone intersticial spaces of a particular size resulting from the use of particles having an average diameter of from 0.1 to 6 millimeters.

The PTO has responded to Applicants' prior remarks with the following:

Applicant argues that "Brownawell '799 is silent as to Applicant's claimed filter using particles of a particular average diameter." It is pointed out, however, that the particles in the chemically active filter member of this reference device must inherently have <u>some</u> average diameter. One of ordinary skill in the oil treatment art would

readily recognize that particles having an average diameter significantly below 0.1 millimeters could cause handling problems in the reference device, since powders are more difficult to handle than are larger granules. One of ordinary skill in the oil treatment art would also readily recognize that particles having an average diameter significantly above 6 millimeters could cause problems in the reference device, since the intersticial space between these particles could be too great to produce adequate contact between the chemically active media and the oil undergoing treatment. Accordingly, this skilled artisan would have been motivated to select particles having an average diameter within the recited range, in order to avoid the above noted problems.

(Office Action of 9/8/05, page 4, emphasis added.)

Applicants greatly appreciate the PTO's detailed remarks but must respectfully submit that these statements could not have been made in the absence of Applicants' teachings.

It is respectfully submitted that the PTO's statement that "particles ...must inherently have <u>some</u> average diameter" says nothing about the selection of particles within a relatively narrow range of 0.1-6 mil. The PTO's position appears to be more analogous to an inherency based anticipation argument rather a prima fascia case of obviousness per MPEP 2143.

Unlike anticipation, MPEP 2143 requires a suggestion or teaching. Per the requirements of MPEP 2143, the '799 reference cannot teach or suggest all of the required limitations of claim 1 without a suggestion to select particles having Applicants' narrowly selected average particle diameter size.

Moreover, the PTO's italicized statement of September 8, 2005, could not have been made without the hindsight benefit of Applicants' teachings as to the importance of having particularly sized intersticial spaces between the particles comprising the beneficial additive, wherein the particularly sized intersticial spaces result from the soluction of particles having a specified average diameter. The CAFC has stated "to imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the

inventor taught is used against its teacher. W.L. Gore & Assocs., Inc., v. Garlock, 220 U.S.P.Q. 303, 312-313. (Fed. Cir. 1983).

Indeed, the PTO's statements as to the 'obviousness' of Applicants' required average particle diameter range ignore the express teachings of other Brownawell references. For example, U.S. Patent 5,252,081 to Brownawell teaches that active filter media suitable for use in making a solid hollow composite have sizes in the range of from 0.1 to 3000 *micrometers*. This translates to .0003 to 118 millimeters. It can thus be appreciated that the PTO's speculation about handling concerns ignores the prior art's use of many, many particles that are less than 0.1 millimeters.

For example, those of skill in the art have often focused on surface area as an important consideration. It will be appreciated that decreasing particle size leads to increasing surface area for contact with the incoming oil to be treated. Many of skill in the art would suggest that it would obvious to select smaller particles to obtain greater surface area. Thus, the PTO's suggestion ignores the other problems and concerns of those of skill in the art and fails to provide a real motivation to do what Applicants have.

In the absence of Applicants' teachings, one of skill in the art would have no motivation to select particles having the narrowly selected average diameter of from 0.1 to 6 millimeters in order to obtain the particularly required instersticial spaces therebetween.

Applicants' have selected a particular structural characteristic, i.e., intersticial spaces of a particular size as resulting from the selection of particles of beneficial additive of a particular average diameter, that is simply ignored in the '799 references.

This fact pattern is thus governed by the Federal Circuit's holding in *In re O'Farrell*. Where the prior art gives no indication of which parameters are critical and no direction as to which of many possible choices is likely to be successful, the fact that the claimed combination falls within the scope of possible combinations taught therein does not render it unpatentably obvious. In re O'Farrell, 7 U.S.P.Q 1673 (Fed. Cir. 1938).

It is respectfully also submitted that the PTO's suggested motivation for Applicants' required intersticial spaces and average particle diameters in Applicants' claim 1 is nothing more than an application of the prohibited 'obvious to try' standard.

"Obvious to try" is not a valid test of patentability. *In re Mercier*, 185 U.S.P.Q. 774 (C.C.P.A. 1975). Patentability determinations based on that as a test are contrary to statute. *In re Antonio*, 195 U.S.P.Q. 6 (CCPA 1977).

As indicated by the '081 reference, there is a wide universe of particle sizes that could be utilized in an oil filter. It is pure speculation on the PTO's part that one of ordinary skill in the art would find it obvious to try and select Applicants' particular limited average diameter sizes in order to obtain Applicant's required intersticial spaces. The ultimate legal conclusion of obviousness must be based on facts or records, not on the Examiner's unsupported allegation that a particular structural modification is "well known" and thus obvious. *In re Wagner et al.* 152 U.S.P.Q. 552 (C.C.P.A. 1967).

Independent claims 7 and 13 respectively disclose an oil filter and a supplemental cartridge for use with an oil filter. The inventions of claims 7 and 13 are similar to independent claim 1 in that they likewise require the use of a chemically active filter having a plurality of particles consisting essentially of a beneficial additive, wherein the particles have an average diameter of from 0.1 to 6 millimeters. Claim 13 as amonded also requires that the beneficial additive consist essentially of at least one of an antioxidant or a mixture of a basic salt and an antioxidant

Brownawell fails to disclose the particular structural aspects of independent claim. 7. For example, claim 7 requires a tapping plate and a mechanically active filter that is "spaced away from said tapping plate". See claim 7.

However, in Brownawell the inactive filter media 12 is adjacent to the upper surface of the housing 4, which Applicants assume the PTO is relying on for the required tapping plate element of claim 7.

Thus, Brownawell also fails to disclosure or suggest the structure required in Applicants' independent claim 7. Applicants have failed to find any response to this argument.

Brownawell also fails to disclose the use of any of antioxidants, either those of independent claim 13 or dependent claim 17. Applicants have failed to find any response to this argument.

Taken as a whole, the sole disclosures of Brownawell '799 are insufficient to provide a prima facie case of obviousness as to the inventions of Applicants'

independent claims 1, 7, and 13 or dependent claim 17. More particularly, Brownawell '799 fails to disclose or suggest all of the required elements of these claims.

Nor does Brownawell '799 disclosure the necessary particle concentration of 90 to 97% of a beneficial additive as is required in independent claim 18.

In fact, Brownswell is completely silent as to the concentration of the active filter media, i.e., at least one of a strong base, hydroperoxide decomposers, or media containing a dispersant functional group. It is respectfully submitted that this is a direct result of Brownswell's failure to recognize the importance of individual particles of a small average diameter having a high (90-97%) concentration of beneficial additive in the particles.

The PTO's position is that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the recited amount of beneficial additive in the reference particles, in order to ensure that a sufficient amount of additive is present in these particles to adequately rejuvenate the oil undergoing treatment".

In the Office Action of September 8, 2005, the PTO states: "...particles in the ...reference device must inherently have some percentage of beneficial additive."

However, as noted above with respect to the PTO's argument of 'some diameter', a rational to justify a modification does not take the place of the suggestion in the prior art to make such a modification. There must be a teaching in the *prior art* for the proposed combination or modification to be proper. *In re Newell,* 13 U.S.P.Q.2d 1248 (Fed Cir. 1989), *emphasis added.* Even if the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art also suggests the *desirability* of such a modification. *In re Laskowski,* 10 U.S.P.Q.2d 1397, 1398 (Fed Cir. 1989).

At this point, the PTO has not indicated the source of the prior art providing the proposed motivations to do what Applicants have done. When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference. *In re Yates*, 211 U.S.P.Q. 1149, 1151 (C.C.P.A. 1981).

It is respectfully submitted that the PTO has failed to provide any such reference because no such prior art reference is available. That is, Applicants' have been unable

to find any teachings in the prior art for filter particles having such high concentrations. It is submitted that until Applicants' claimed invention, such particles and concentrations were unknown.

Accordingly, it is respectfully submitted that independent claims 1, 7, 13, and 18 and dependent claim 17 are nonobvious over the sole disclosures of Brownawell '799. Brownawell '799 fails to disclose or suggest all of the required elements of these claims.

Reconsideration and removal of the rejection is respectfully requested as to independent claims 1, 7, 13, and 18, and dependent claim 17 as well as to all claims depending therefrom.

3. Rejection of claim 3 again under 35 U.S.C. §103(a) as unpatentable over Brownawell et al., U.S. 5,069,799, hereafter "Brownawell" or "'799", as applied above, and further in view of DeJovine, U.S. 4,144,166, hereafter "DeJovine" or "'166".

Claim 3 continues to stand rejected on the grounds that it "would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the polyolatin of DeJovine as the 'polymer matrix' of Brownawell '799 since this polyolatin is capable of supporting the calcium carbonate or calcium hydroxide of this primary reference in the required manner". (Office Action of 3/2/05, page 3, citations omitted.)

Applicants appreciate the detailed basis of rejection but must respectfully disagree.

The secondary reference DeJovine is relied upon for its disclosure of a relatively insoluble polymer support media. DeJovine discloses a solid thermoplastic polymer having a controlled rate of dissolution in oil, the polymer containing particles that are intentionally released into the oil as a function of the controlled rate of dissolution of the polymer. The PTO appears to rely on DeJovine's disclosure that some polymers having a controlled rate of dissolution into oil are 'relatively oil-insoluble'.

With respect to dependent claim 3 and thus independent claim 1, the PTO states that it would have been obvious to one of ordinary skill in the art to provide the chemically active filter modia of Brownawell with the relatively oil-insoluble polymer support material of DeJovine. The PTO deems this modification to be obviousness in

view of the disclosure by Brownawell '799 that the chemically active filter media may be supported on a substrate that is a polymer matrix. (Office Action of3/2/05, pg. 3, citations omitted.)

However, the discussion in Brownawell '799 in col. 2, lines 1-7 as to the support of the chemically active filter media on a substrate in no way supports the PTO's stated basis of rejection. Rather, the disclosure at col. 2, lines 1-7 of Brownwell '799 merely indicates that the chemically active filter media may be supported on *substrates* such as alumina, activated clay, cellulose, cement binder, silica-alumina, activated carbon and the like. Brownawell continues on to state that such *substrates* may be in the form of pellets, cylinders, or spheres. Nothing in Brownawell '799 indicates that individual particles that comprise *both* a chemically active material and a thermoplastic could be used in the housing 4 of Figure 1.

MPEP 2143 requires that the motivation to do what Applicants have done come from the cited references. Even if the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art also suggests the *desirability* of such a modification. *In re Laskowski*, 10 U.S.P.Q.2d 1397, 1398 (Fed Cir. 1989). There must be a teaching in the prior art for the proposed combination or modification to be proper. *In re Newell*, 13 U.S.P.Q.2d 1248 (Fed Cir. 1989). No support or evidence has been offered to show that the proposed rationale comes from the cited references.

Also, the teachings of DeJovine fail to rectify the above noted deficiencies of Brownawell '799 in regards to the elements of amended independent claim 1 as discussed above in Section 2 and hereby incorporated by reference.

In particular, it is noted that the teachings of DeJovine preclude intersticial spaces between particles. DeJovine requires either a solid mass or a colloidal suspension (See '166, col. 2, lines 46-57.) Thus, it is not clear what the combination of Brownawell '799 and DeJovine provides, i.e., pellets or a solid mass or colloidial suspension.

In the absence of a clear teaching, it is submitted that such a fact pattern is one f the reasons for the holding in *Ratti*. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being

modified, then the teachings of the references are not sufficient to render the claims prima facio obvious. In re Ratti, 123 U.S.P.Q. 349 (CCPA 1959); MPEP 2143.01.

Finally, it is noted that one of skill in the art would not select the polymer of DeJovine as the 'polymer matrix' of Brownawell '799 as suggested by the PTO. Applicants' claim 1 clearly requires that the beneficial additive be retained in the oil filter. As clearly indicated above, the polymers of DeJovine are intended to dissolve and release the additive into the oil stream. This contrary to the intended operation of Applicants' claimed invention. Thus, the combination of Brownawell and DeJovine produces an inoperative embodiment that is outside the scope of Applicants claimed invention set forth in dependent claim 3. Indeed, such a combination would result in intersticial spaces of an ever increasing size that would fail to screen out complexes that result from the action of the beneficial additive. One of skill in the art would thus not be motivated to do what has been suggested by the PTO.

Accordingly, it is respectfully submitted that DeJovine cannot rectify Brownawell '799's failure to disclosure or suggest all of the elements of the inventions of Applicants' claim 1. Because claim 1 is nonobvious over the cited combination, it is submitted that claim 3 is likewise nonobvious.

Reconsideration and removal of the rejection is respectfully requested as to ricpendent claim 3 for the reasons set forth above.

4. Rejection of claim 4 again under 35 U.S.C. §103(a) as unpatentable over Brownawell et al., U.S. 5,069,799, hereafter "Brownawell" or "'799", as applied above, and further in view of Bilski et al., U.S. 5,725,031, hereafter "Bilski" or "'031".

Sections 2 and 3 above are hereby incorporated by reference.

Claim 4 is dependent upon amended independent claim 1.

It is respectfully submitted that Bilski cannot rectify the above noted deficiencies of Brownswell '799.

In addition, Bilski discloses a delivery system for PTFE. As noted in col 2, lines 48-61, the PTFE colloidial suspension is displaced by the incoming oil at first engine start up. Thus, the one time delivery system of Bilski fails to satisfy the basis

requirements of Applicants' claimed oil filter, i.e., that the beneficial additive be released as oil *circulates* through the filter.

Moreover, Bilski teaches that the small particle size is crucial to having the PTFE completely displaced by the incoming oil. One of skill in the art would thus expect that small particles sizes would teach away from the retention of particles in a chemically active filter member as is required in Applicants' amended independent claim 1.

Accordingly, it is respectfully submitted that Bilski cannot rectify Brownawell '799's failure to disclosure or suggest all of the elements of the inventions of Applicants' claim 1. Because claim 1 is nonobvious over the cited combination, it is submitted that claim 4 is likewise nonobvious.

The PTO disregards these arguments on the basis that Bilski is only relied upon for the location of the chemical adding element radially and coaxially inside a mechanically active filter element.

However, the PTO may not ignore those portions of a reference that lead one of skill in the art away from a claimed invention. The Federal Circuit has specifically prohibited such actions. A reference that leads one of ordinary skill in the art away from the claimed invention cannot render it unpatentably obvious. *Dow Chem. Co. v. American Cyanamid Co.* 2 U.S.P.Q.2d 1350 (Fed. Cir. 1987).

For example, the Federal Circuit has clearly stated that "each prior art reference must be evaluated as an entirety, and ...all of the prior art must be evaluated as a whole". *In re Fritch*, 23 U.S.P.Q.2d 1780, 1782 (Fed. Cir. 1992). And particularly on point, the CCPA had earlier said "[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re Keller*, 108 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

Accordingly, the PTO may not ignore those portions of a reference that lead one of skill in the art away from a claimed invention.

Reconsideration and removal of the rejection is respectfully requested as to dependent claim 4 for the reasons set forth above.

5. Rejection of claim 16 is again under 35 U.S.C. §103(a) as unpatentable over Brownawell et al., U.S. 5,069,799, hereafter "Brownawell" or "'799", as applied above, and further in view of Robers et al., U.S. 5,544,699, hereafter "Robers" or "'699".

Sections 2 and 3 above are hereby incorporated by reference.

Claim 16 is dependent upon amended independent claim 13 and incorporates all of the limitations thereof.

It is respectfully submitted that Robers fails to rectify the above noted deficiencies of Brownawell '799's in regards to Applicants' claim 13. In particular, Robers fails to disclosure or suggest all of the elements of the inventions of Applicants' claim 13 that Brownawell fails to disclose as noted above Section 2.

Because claim 13 is nonobvious over the cited combination, it is submitted that claim 16 is likewise nonobvious.

Reconsideration and removal of the rejection is respectfully requested as to dependent claim 16 for the reasons set forth above.

6. Request for an Interview.

The Undersigned respectfully requests an Interview with the Examiner. It is acknowledges that such is completely within the Examiner's discretion. However, it is believed that such a discussion will facilitate the resolution of certain outstanding issues and may resolve the long pendency of this application.

CONCLUSION

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing amendments and/or remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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Thursday, December 08, 2005

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